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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/764,011	01/17/2001	Kevin W. Burrows	MS1-2747US	3590
22801	7590	04/19/2006	EXAMINER	
LEE & HAYES PLLC 421 W RIVERSIDE AVENUE SUITE 500 SPOKANE, WA 99201			FILIPCZYK, MARCIN R	
			ART UNIT	PAPER NUMBER

2163

DATE MAILED: 04/19/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

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**Office Action Summary**

Application No.

09/764,011

Applicant(s)

BURROWS ET AL.

Examiner

Marc R. Filipczyk

Art Unit

2163

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 09 February 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-5, 7-10, 15-19, 21-24, 29-43 and 48-66 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-5, 7-10, 15-19, 21-24, 29-43 and 48-66 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 17 January 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.

- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

Art Unit: 2163

***Response to Amendment***

This action is responsive to Applicant's response filed February 9, 2006 wherein claims 1-5, 7-10, 15-19, 21-24, 29-43 and 48-66 are pending.

**To expedite the process of examination Examiner requests that all future correspondences in regard to overcoming prior art rejections or other issues (e.g. amendments, 35 U.S.C. 112, objections and the like) set forth by the Examiner that Applicants provide and link to the most specific page and line numbers of the disclosure where the best support is found (see 35 U.S.C. 132).**

***Claim Rejections - 35 USC § 101***

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 1-5, 7-10, 15-19, 21-24, 29-43 and 48-66 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

In the present case, independent claim 1 only recites an abstract idea. The recited method steps of merely creating nodes by successively finding a median is a mathematical construct (algorithm) and non of the recited steps comprise a practical application. These steps only constitute an idea of how to select a median and do not generate a useful, concrete and tangible result.

Since the claimed invention, as a whole, is not within the technological arts as explained above, claim 1 and claims 2-5, 7-10, 15-19, 21-24, 29-43 and 48-66 which depend from claim 1 or contain similar subject matter as claim 1, are deemed to be directed to non-statutory subject matter.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-5, 7-10, 15-19, 21-24, 29-43 and 48-66 are rejected under 35 U.S.C. 103(a) as best as Examiner is able to ascertain as being unpatentable over “INTRODUCTION TO ALGORITHMS” by Cormen, Leiserson and Rivest (hereinafter “CLR”) in view of “Indexing Large Metric Spaces for Similarity Search Queries” by Bozkaya and Tolga (hereinafter “BT”).

Regarding claims 1-5, 7-10, 15-19, 21-24, 29-43 and 48-66, CLR discloses creating and searching (page 388, CLR) a balanced binary tree using nodes and assigning values (page 386, fig. 19.4, CLR), but does not expressly teach a method for creating a binary tree from a list of elements, wherein the list includes left and right side groupings.

(Note: creating a binary balanced tree involves inserting left and right descendent nodes)

However, BT teaches indexing large metric spaces for similarity search queries (title, BT) in which a binary vp-tree is constructed (binary trees) by subdividing a list into two lists of equal cardinality at the median (pages 6 and 7, section 3.3). BT also teaches breaking up the two lists and forming an additional median (page 10, 3.8 and 3.9, BT).

(Note: binary vp-tree is introduced as a binary tree, see page 5, BT)

Art Unit: 2163

Further, selecting a side for processing, where left side groupings are in preference to right side groupings and determining if a list has an even or odd number of elements was a common programming technique before the Applicant's claimed invention used for selecting an appropriate element as the median. Hence, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to create binary tree structures by reading and subdividing the list by use of a median as taught by BT to effectively construct a tree structure including all the elements in the list.

(Note: elements in a list may represent data of any type i.e. logged events)

#### ***Response to Amendment***

Applicant's arguments filed on February 9, 2006 have been fully considered but they are not persuasive. The arguments and responses are listed below.

Applicant argues on pages 22-24 that the present claims do not contain any deficiencies, the main focus on page 22 being "the claimed methods are stored on computer-readable medium in the form of computer-executable instructions" and on pages 23-24, the "creation of data structure has real world use and **can provide** for real world results", such as in database applications.

Examiner disagrees. The tangible requirement does not necessarily mean a claim must either be tied to a particular machine or apparatus, the claim must however set forth a practical application according to 35 USC § 101 to produce a real world result, see Benson, 409 U.S. at 71-72, 175 USPQ at 676-77 (invention ineligible because had "no substantial practical

Art Unit: 2163

application.”). Applicant’s statement that data structure has real world use and can provide for real world results is inconsistent with the claims. Applicant claims a method comprising steps and not a data structure itself. Further, a method claim must produce a real, useful, concrete and tangible result. Applicant manipulates numbers from the list and ends up with a graphical representation of a mathematical algorithm, not a usable result. Applicant has no practical application in the claims, instead argues **potential applications** such as in a “database” which is not claimed in any of the claims, and is not provided in the disclosure. In summery, one may not patent a process that comprises every “substantial practical application” of an abstract idea, because such a patent “in practical effect would be a patent on the [abstract idea] itself.” Benson, 409 U.S. at 71-72, 175 USPQ at 676.

Applicant argues on pages 26 and 27 that CLR/BT do not teach separating the list based on whether it has an even or odd number of elements. Applicant further requests an explanation why the Examiner in his 11/30/05 response used statements such as “most” and “any missing” elements are obvious.

Examiner disagrees. CLR/BT teach most of the elements in the claims and any missing elements not directly disclosed by CLR/BT Examiner ascertains are obvious; such as selecting a side for processing or determining if a list has an even or odd number of elements.

As previously explained, BT system uses a method of reading a list of elements of a set to account for the total number of elements in that set, call it “cardinality” (pages 7 and 10), and selects an “arbitrary element” as a starting element of the set S, then using the cardinality BT notes the most distant element from the arbitrary element and based on these two elements, the

Art Unit: 2163

size of the set is obtained and a median is selected (pages 7 and 10). Thus, BT system is not limited to a given order of elements in a set (list), but instead may choose any element as a starting point to generate a B-tree and uses the obtained cardinality as a basis for determining the starting point, the median, and is equivalent to odd and even number of elements in a list as claimed since the amount of elements in the list (cardinality) may change the median and list to even or odd, respectively. A left or right side grouping in CLR/BT is chosen based on user application, and obviously one side must be chosen for processing after the median is selected.

Therefore, most elements and missing elements stated by the Examiner and disclosed by CLR/BT refers to an odd and even number of elements, and although CLR/BT do not use the same terminology for groupings based on odd/even number of elements, they do account for this feature as explained above, in addition, a list can only have an even, odd or zero amount of elements and therefore Examiner ascertains these specific limitations to be present in any list with numbers, including CLR/BT list.

Applicant argues on pages 28 and 29 that CLR/BT combination do not generate the same output of elements as claimed.

Examiner notes that CLR/BT having selected the same median as Applicants can generate the same right/left side grouping dependent on the numbers in the set since the list (set of elements) is split based on the value of the numbers and the median.

Examiner further notes that Applicant's claims are rejected for comprising non-statutory subject matter. For details, please refer to the rejections.

Art Unit: 2163

With respect to all the pending claims 1-5, 7-10, 15-19, 21-24, 29-43 and 48-66, Examiner respectfully traverses Applicant's assertion based on the discussion and rejections cited above.

***Conclusion***

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Marc R. Filipczyk whose telephone number is (571) 272-4019. The examiner can normally be reached on Mon-Fri, 8:30am-5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Don Wong can be reached on 571-272-1834. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.




Art Unit: 2163

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

MF

April 14, 2006

  
**DONWONG**  
**SUPERVISORY PATENT EXAMINER**